Basic Python

1. Split this string

```
s = "Hi there Sam!"
```

```
lst = s.split(" ")
print(lst)
```

```
['Hi', 'there', 'Sam!']
```

italicized text ## 2. Use .format() to print the following string.

Output should be: The diameter of Earth is 12742 kilometers.

```
planet = "Earth"
diameter = 12742
```

```
print("The diameter of {0} is {1} kilometers.".format(planet, diameter))
```

```
The diameter of Earth is 12742 kilometers.
```

3. In this nest dictionary grab the word "hello"

```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

```
print(d["k1"][3]["tricky"][3]["target"][3])
```

```
hello
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
aZeros = np.zeros(10)
print(aZeros)
```

```
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
aFives = np.ones(10)*5
print(aFives)
```

```
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

5. Create an array of all the even integers from 20 to 35

```
evenArray = np.arange(20, 35, 2)
print(evenArray)
```

```
[20 22 24 26 28 30 32 34]
```

6. Create a 3x3 matrix with values ranging from 0 to 8

```
matrix =  np.arange(0, 9).reshape(3,3)
print(matrix)
```

```
[[0 1 2]
 [3 4 5]
 [6 7 8]]
```

7. Concatinate a and b

a = np.array([1, 2, 3]), b = np.array([4, 5, 6])

```
a=np.array([1,2,3])
b=np.array([4,5,6])
c=np.concatenate((a,b), axis=None)
print(c)
```

```
[1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd



df=pd.DataFrame([[1,2], [3,4], [5,6]] , columns=['column1', 'column2'])
print(df)
```

```
   column1  column2
0        1        2
1        3        4
2        5        6
```

9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023

```
dates = pd.date_range(start="1-1-2023", end="10-2-2023")
for i in dates:
  print(i)
```

```
2023-08-04 00:00:00
2023-08-05 00:00:00
2023-08-06 00:00:00
2023-08-07 00:00:00
2023-08-08 00:00:00
2023-08-09 00:00:00
2023-08-10 00:00:00
2023-08-11 00:00:00
2023-08-12 00:00:00
2023-08-13 00:00:00
2023-08-14 00:00:00
2023-08-15 00:00:00
2023-08-16 00:00:00
2023-08-17 00:00:00
2023-08-18 00:00:00
2023-08-19 00:00:00
2023-08-20 00:00:00
2023-08-21 00:00:00
2023-08-22 00:00:00
2023-08-23 00:00:00
2023-08-24 00:00:00
2023-08-25 00:00:00
2023-08-26 00:00:00
2023-08-27 00:00:00
2023-08-28 00:00:00
```

```
2023-08-29 00:00:00
2023-08-30 00:00:00
2023-08-31 00:00:00
2023-09-01 00:00:00
2023-09-02 00:00:00
2023-09-03 00:00:00
2023-09-04 00:00:00
2023-09-05 00:00:00
2023-09-06 00:00:00
2023-09-07 00:00:00
2023-09-08 00:00:00
2023-09-09 00:00:00
2023-09-10 00:00:00
2023-09-11 00:00:00
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2023-09-23 00:00:00
2023-09-24 00:00:00
2023-09-25 00:00:00
2023-09-26 00:00:00
2023-09-27 00:00:00
2023-09-28 00:00:00
2023-09-29 00:00:00
2023-09-30 00:00:00
```

10. Create 2D list to DataFrame

lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]


df1=pd.DataFrame(lists, columns=['col1', 'col2', 'col3'])
print(df1)
```

```
   col1 col2  col3
0     1  aaa    22
1     2  bbb    25
2     3  ccc    24
```

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